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STIMULUS FADING AS TREATMENT FOR OBSCENITY IN A BRAIN-INJURED ADULT

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Obscene verbalizations of a person with traumatic brain injury were treated using stimulus fading as the singular form of intervention. Results of a functional assessment revealed that obscenity was maintained by negative reinforcement. Stimulus fading (initial elimination of instructional demands followed by their gradual reintroduction) produced immediate and substantial reductions in obscenity that were maintained as the frequency of demands increased to baseline levels. Potential applications of the use of antecedent treatment strategies are discussed.

DESCRIPTORS: antecedent treatment procedures, stimulus fading, negative reinforcement, obscenity, brain injury

Negative reinforcement represents a common and potentially powerful process for behavior change (Iwata, 1987). Aberrant behaviors maintained by negative reinforcement have been successfully treated by systematic manipulation of consequent events (Iwata, Pace, Kalsher, Cowdery, & Cataldo, 1990; Mason & Iwata, 1990; Steege, Wacker, Berg, Cigrand, & Cooper, 1989). However, the effects of antecedent manipulations on negatively reinforced behaviors are less well documented.

Antecedent treatment strategies attempt to change behavior by manipulating relevant stimulus conditions. For example, Carr, Newsom, and Binkoff (1976) demonstrated that self-injurious behavior (SIB) occurred at a relatively high rate in a demand situation and at a low rate in a nondemand situation. Further, they found that the rate of SIB immediately decreased when a stimulus associated with the termination of demands was presented.

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Two recent studies (Pace, Iwata, Cowdery, Andree, & McIntyre, 1993; Zarcone et al., 1993) investigated the effects of combining antecedent and consequent treatment strategies on behavior maintained by negative reinforcement. In both studies, a functional analysis indicated that instructional demands served as an establishing operation (Michael, 1993) for escape behavior (SIB). The antecedent modification consisted of stimulus fading (initial elimination of instructional demands followed by their gradual reintroduction to baseline levels), and the consequent intervention consisted of extinction (subjects were no longer allowed to escape or avoid instructional demands by engaging in SIB). Both Pace et al. and Zarcone et al. reported that the combined treatment resulted in immediate reductions in SIB. In addition, Zarcone et al. found that these initial reductions in SIB were greater than those found in an extinction-only condition.

The above studies were concerned with the role of antecedent manipulations as an adjunct to extinction. However, extinction of negatively reinforced behavior (e.g., prevention of escape) can produce an initial escalation in responding that can

be undesirable or even dangerous. In those cases in which prevention of escape produces extremely high rates or dangerous forms of behavior, the exclusive use of antecedent treatment procedures may be preferable.

In this study, we examined the effects of an antecedent manipulation as the singular form of treatment for a behavior maintained by negative reinforcement.

METHOD

Subject and Setting

Mick, a 49-year-old traumatically head-injured man, participated. He had sustained his head injury in an automobile accident approximately 9 months prior to the study. Mick lived in a supervised home (with five other head-injured adults) located on a large rural campus containing 11 group residences and educational, vocational, and recreational programs for head-injured adults and children. Mick required supervision to complete his daily activities, but he had no apparent physical limitations. In addition, he displayed chronic use of obscene comments, occasional severe physical aggression and property destruction, and anterograde amnesia.

Response Measurement and Reliability

Assessment and training sessions occurred once per day for 15 min in Mick's living room. Occurrence and nonoccurrence of obscenity were scored during continuous 10-s intervals cued by a cassette tape. The frequency of demands per session was also recorded. Obscenity was defined as socially proscribed language, abusive and/or aggressive verbalizations, or any loud vocalization. Independent interobserver agreement measures were taken during 57% of the sessions and were calculated by dividing the number of agreements by the number of agreements plus disagreements multiplied by 100%. Interobserver agreement for the occurrence of obscenity was 80%. Agreement for the occurrence of demands was 94%. Agreements for the nonoccurrence of obscenity and demands were 98% and 96%, respectively.

Experimental Sequence and Design

The first phase of the study consisted of a functional analysis baseline, during which Mick was exposed to a series of conditions in a multielement design (Sidman, 1960; Ulman & Sulzer-Azaroff, 1975). Demand fading and baseline (demand) conditions were subsequently alternated in a reversal design.

Functional analysis. Mick was exposed to demand, social disapproval, and conversation conditions to identify the variable(s) maintaining his obscenity. Demand and social disapproval conditions were identical to those described by Iwata, Dorsey, Slifer, Bauman, and Richman (1982), adjusted for use with an adult. In the demand condition, the experimenter presented simple requests (e.g., put on your shoes) every 15 s. Praise followed compliance, and overt capitulation (e.g., "OK, you don't have to do it") followed each instance of obscenity. In the social disapproval condition, work and/or leisure materials were available, and verbal disapproval followed obscenity. The conversation condition served as a control. In this condition obscenity was ignored, leisure materials (e.g., magazines) were available, and the experimenter noncontingently initiated social conversation every 15 s.

Demand fading. The demand fading condition was identical to the baseline demand condition except for the initial rate of demand presentation and the occurrence of noncontingent social conversation. The experimenter continuously engaged Mick in conversation, interrupting it only to present demands. The first session began with three demands and gradually increased to the assessment (baseline) frequency of demand presentation. No specific criterion was used to determine how rapidly demand rate increased across sessions. Two reversals were introduced during the demand fading treatment (at Session 21 and again at Sessions 32 through 34).

RESULTS AND DISCUSSION

Figure 1 shows data on obscenity and demand presentations during functional assessment (baseline) and demand fading (treatment). The assessment data clearly indicate that Mick's obscene lan-

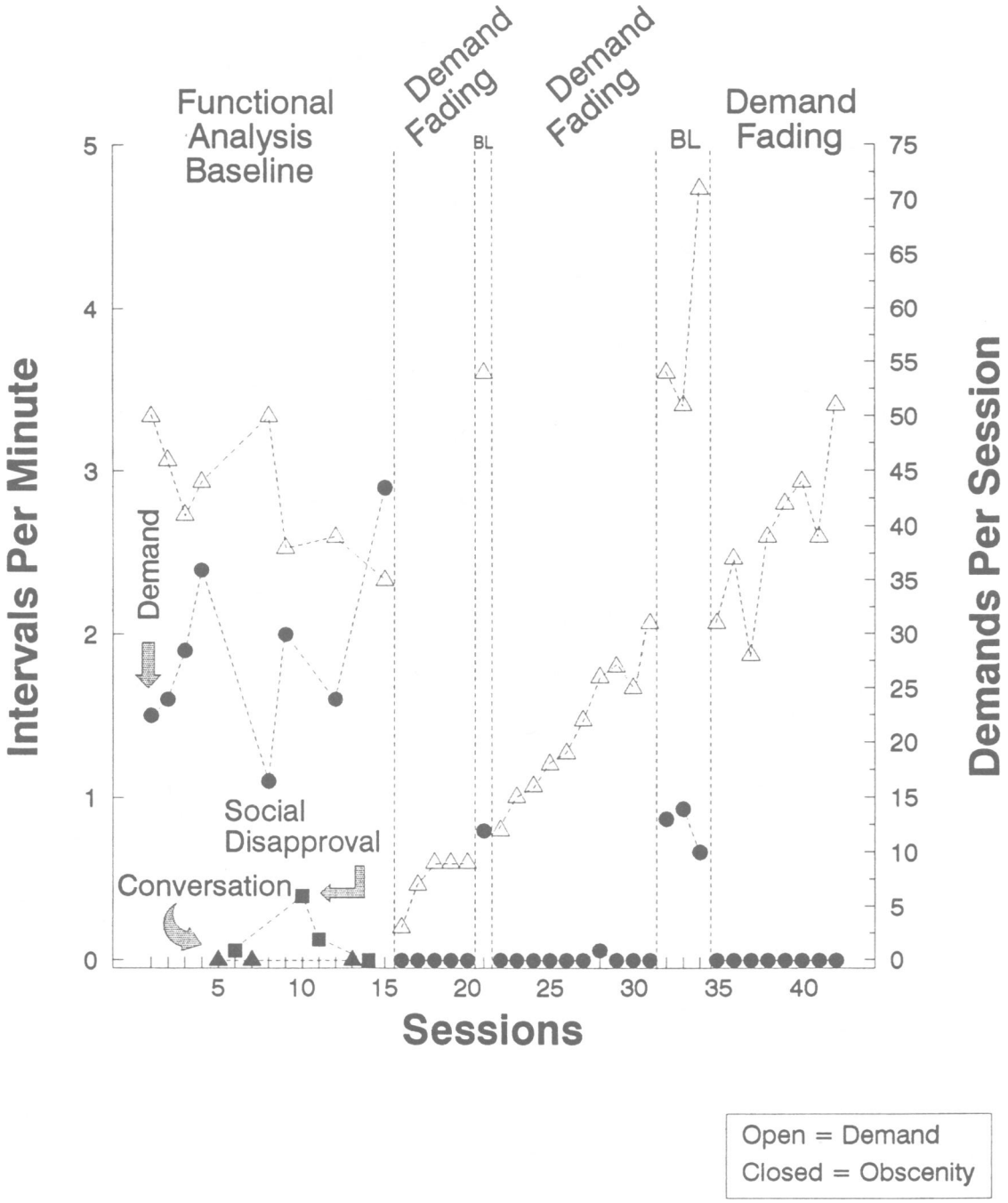

Figure 1. Intervals per minute of obscenity (left axis) and frequency of demands (right axis) across functional analysis conditions (baseline) and demand fading.

guage was maintained by negative reinforcement. Obscenity occurred an average of 1.9, 0.1, and 0 intervals per minute in the demand, social disapproval, and conversation conditions, respectively. When demand fading was introduced, obscenity immediately decreased to zero and remained at near-zero levels as the number of demands was gradually increased. However, during reversal con-

ditions, in which demands were abruptly increased to baseline rates and noncontingent conversation was eliminated (Baselines 2 and 3), obscenity immediately increased. These results suggest that demand fading was responsible for the decrease in Mick's obscene behavior.

Zarcone, Iwata, Smith, Mazaleski, and Lerman (1994) investigated a similar antecedent treatment, but reported somewhat different results. They found that the suppressive effects of stimulus fading were not maintained over time. These discrepant results are easily reconcilable based on the occurrence of initial escape responses. Mick engaged in obscenity only once during stimulus fading, and therefore only briefly contacted the escape contingency. However, once subjects in the Zarcone et al. study began engaging in SIB, the escape contingency served to strengthen the behavior and thereby increased the likelihood of subsequent escape responses. This account predicts that stimulus fading (as a singular treatment) will be maximally effective when the target behavior occurs at or near zero during fading.

However, why did the Zarcone et al. (1994) subjects initially begin to respond, but Mick did not? Perhaps this difference is simply related to the response strength of the target behavior. Subjects in the Zarcone et al. study had long histories of SIB. Mick, at the time of the study, had been injured (and had been engaging in escape-motivated obscenities) for approximately 9 months. Another difference between the studies is related to the manner in which the demands were introduced. We faded demands into an ongoing conversation condition, one that was not previously associated with obscenity. Our fading procedure could be described as embedding demands into a pleasant activity (Carr et al., 1976). Zarcone et al., however, introduced demands in a situation that had been previously associated with SIB, which may have been more likely to produce escape behavior.

These findings contain both theoretical and applied implications. They demonstrate that antecedent treatment approaches (as singular interventions) can produce meaningful behavior change. They also have potential applied implications for the treatment of behaviors for which an escalation in rate and/or intensity commonly associated with extinction is undesirable or dangerous. For example, informal observation revealed that attempts to reduce Mick's obscenity through extinction or punishment (i.e., persisting in demand presentation and/or guided compliance) often resulted in severe physical aggression or property destruction. The exclusive use of an antecedent procedure avoided these dangerous behaviors, which could not be managed in his current setting, and prevented a potentially expensive hospitalization or relegation to a more restrictive environment. Clearly, additional research is necessary to assess the generality of Mick's results and to identify the optimal conditions for the use of antecedent, consequent, or combined treatment approaches.

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